Forumul Inventatorilor Români

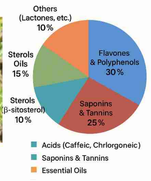
Phytotherapeutic Support for Prostate Health Using Xanthium spinosum

Emil CEBAN, Kamel EARAR, Oleg SOLOMON,
Mariana JIAN, Viorel JINGA

„Dunărea de Jos" University of Galați, România
Nicolae Testemițanu State University of Medicine and Pharmacy, Chisinau, Republic of Moldova
Carol Davila University of Medicine and Pharmacy, București, România

Abstract
Prostate health is a key factor in maintaining male reproductive function. Epidemiological studies show that most men develop various prostate conditions during their lifetime, primarily due to hormonal imbalances. Therefore, maintaining optimal prostate health is a fundamental goal in preventive medicine. A balanced lifestyle and the use of phytotherapeutic preparations with anti-inflammatory and diuretic properties can contribute significantly to prevention. Among these, Xanthium spinosum (spiny cocklebur) stands out as a valuable medicinal plant with documented therapeutic potential.

Innovation Description
This invention explores the application of Xanthium spinosum in supporting prostate health through its phytotherapeutic properties. The plant, naturally occurring in Europe including Romania, contains a unique mix of bioactive compounds such as essential oils, fatty acid salts, flavones, phytosterols (including beta-sitosterol), saponins, tannins, caffeic and chlorogenic acids, and xanthanin lactones. These compounds give the plant significant therapeutic qualities relevant for prostate and urinary tract conditions.



Advantages
· Prostate Decongestant: Helps reduce inflammation in benign prostatic hyperplasia (BPH) and alleviates associated symptoms.
· Diuretic and Urinary Antiseptic: Promotes toxin elimination and prevents urinary tract infections.
· Anti-inflammatory and Anticongestive: Reduces inflammation and congestion in the prostate and urinary system.
· Natural, Accessible Source: The plant grows spontaneously and can be easily harvested for medicinal use.

Forms of Administration
• Herbal Infusion: Made by steeping the aerial parts of the plant; dosage should follow guidance from a phytotherapy specialist.
• Tincture: Used as an adjuvant in the treatment of prostate conditions, helping to alleviate specific symptoms.
During use, it is recommended to avoid Spices, fermented dairy products, citrus fruits, acidic foods, pickles, and alcohol.

Applications
• Preventive and complementary therapy for prostate enlargement (BPH)
• Support in managing chronic prostatitis
• General urinary health and detoxification

Lifestyle Recommendations
For maximum benefit, phytotherapeutic treatment should be paired with:
• A balanced diet
• Regular physical activity
• Healthy body weight maintenance
• Increased intake of teas, fruits, and vegetables
• Reduced consumption of animal fats

The combined approach of herbal remedies based on Xanthium spinosum and a healthy lifestyle represents an effective strategy to preserve prostate function and prevent age-related disorders.

Phytotherapeutic Formulations for Preserving Prostate Health and Balancing Urinary and Salivary pH

Kamel Earar, Emil CEBAN, Viorel JINGA,
Mariana JIAN, Solomon OLEG, Simona PÂRVU,
Andrei Victor SANDU, Mariana LUPOAE

• Faculty of Medicine and Pharmacy, „Dunărea de Jos" University of Galați, România
• Faculty of Stomatology, Nicolae Testemițanu State University of Medicine and Pharmacy, Chisinau, Republic of Moldova
• Facultaty of Medicine, Carol Davila University of Medicine and Pharmacy, București, România
• National Institute of Public Health, Bucharest, România
• „Gheorghe Asachi" Technical University of Iași, România

Abstract
This invention belongs to the field of phytotherapy and relates to a herbal composition with synergistic effects on both prostate health and the acid-base balance of the body. It is designed for use in the prevention and adjuvant treatment of benign prostatic hyperplasia (BPH) and chronic prostatitis.While various herbal products are known to utilize individual plant extracts for alleviating urinary symptoms caused by prostate disorders, there is no documented formulation that simultaneously targets prostate support and pH regulation (both urinary and salivary), contributing to systemic anti-inflammatory effects and overall metabolic balance.

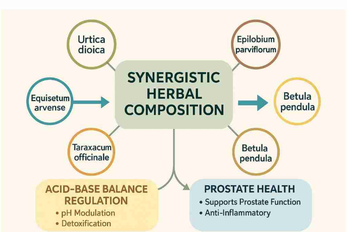
Innovation Description
The invention consists of a phytotherapeutic composition containing extracts or dried parts of the following medicinal plants:
• Urtica dioica (Stinging Nettle) – diuretic, anti-inflammatory, detoxifying
• Epilobium parviflorum (Small-flowered Willowherb) – specific anti-inflammatory effect on the prostate
• Equisetum arvense (Horsetail) – remineralizing, diuretic, contributes to urinary pH regulation
• Taraxacum officinale (Dandelion root) – liver and kidney detoxifier, supports alkaline environment
• Betula pendula (Birch) – mild diuretic, anti-inflammatory
These herbs are selected for their complementary therapeutic actions and synergistic interaction.

Advantages
· Synergistic therapeutic effect by combining herbs with complementary actions
· Multiple mechanisms of action:
o Prostate-protective
o Anti-inflammatory
o Detoxifying
o Mildly alkalinizing
· Flexible formulation options (tea, capsules, tincture)
· Safe phytotherapeutic profile, with no significant adverse effects

Forms of Administration
• The herbal preparation can be delivered in several forms:
· Herbal tea (infusion)
· Capsules with powdered plant material
• · Hydroalcoholic tincture

Applications
•
· Prevention and adjuvant treatment of benign prostatic hyperplasia (BPH) and chronic prostatitis
· Regulation of urinary and salivary pH by supporting detoxification and the elimination of acidic metabolites
• · Support for liver and kidney function, contributing to systemic homeostasis

Effect of Regular Use
· Reduction of prostate inflammation
· Normalization of urinary flow
· Mild alkalinization of urine
· Improved salivary pH (as a marker of metabolic balance)
· Enhanced liver and kidney detoxification



Forumul Inventatorilor Români

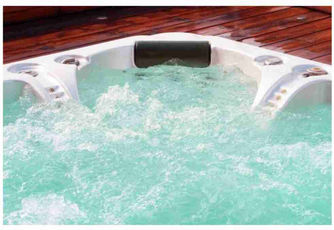
represented by
ROMANIAN INVENTORS FORUM
organizers of EUROINVENT - European Exhibition of Creativity and Innovation, Iași - Romania

GHEORGHE ASACHI TECHNICAL UNIVERSITY OF IASI

Jacuzzi system for thermalism with hydro-/air-massage and halochamber treatments with solions

Authors:
I.G. SANDU, A.V. SANDU, I. SANDU,
K. EARAR, V. VASILACHE, C.M. ȘTIRBU,
R.A. CRIȘAN DABIJA, M. CHIRAZI,
A. VLADESCU, M.C. COTRUT,
M.D. VRANCEANU

Patent RO134023 (B1)



The invention relates to a jacuzzi system for thermalism with hydro-/air-massage and halochamber treatments with solions, to be used for the prevention and treatment of cardio-respiratory, osteo-muscular and neuro-motor diseases as well as for improving performance in children, elderly and sportsmen or persons performing intense physical activity. The system consists of a parallelepipedal or circular tight chamber, with ionized windows, with UV filters, having, in central position, a round-, oval- or lagune-shaped basin made of glass fibers and photo-thermal resistive polymer, an aerosol-generating bubbling device with concentrated solution of NaCl, KCl, CaCl, MgCl and KI in a mass ratio equal to 7.95 : 1,0 : 0.5 : 0.5 : 0.05, where, through the frits from the bottom side, overheated water vapours are purged to reach the preset levels of solions, the bubbling device being placed in a niche next to the entrance door, where for the control, in real time, of the working parameters, there are used devices with specific sensors coupled to a microcomputer, which also enables modification of the water vapour flow-rate for bubbling, the basin volume is correlated with the halochamber volume and it ranges between 1000 and 10000 liters, with a depth of 0.5...1.5 m, and the working temperature ranges between 35...40°C, on the walls, the system having a network of uniformly zig-zag distributed purging nozzles for hydro- and air-massage, the jets from the two sets of nozzles being obtained by pressurized recycling of the concentrated salt solution from the basin and the solion-charged air from the halochamber, the volume of saturated solution from the bubbling device needs to be higher than 1/20000 of the halochamber volume, and the bubbling device, which has above a linewood grate for retaining drops, is only half filled with the salt solutions which are at the saturation limit, with a temperature within the range of 75...80°C.

Used for artificial hallochambers - for respiratory and cardio- health related issues.

The invention is based on a series of principles of operation of the system with jacuzzi and halocamera, involving for body harmonization the process of thermalism (hydrotherapy), which uses two sets of jets by nozzles arranged uniformly in the network on the walls of the pool, one by recirculating the pool. saturated solution of salts with regulated reheating and the other by injecting air loaded with solutions taken from the halochamber and heated to a temperature of 30-35 ° C, and for the prevention and treatment of cardio-respiratory, osteo-muscular, neuro-motor diseases with solions bioactive (halotherapy) in the halocamera. The latter are continuously generated from Aitken-type saline nanoaerosols (low-packing nanopolyhedra) by concentric superstructuring with water pentahydrols formed in situ by semicoordinative aquatemplar in the anionic vertices of the salt polyhedra resulting in concentrically movable spherical nanoglomerular clusters.

ADVANTAGES
-allows the use of a larger number of applicants (2-10);
-allows the co-assistance of hydrotherapy and halotherapy necessary to improve certain ailments or to improve human performance;
- optimal levels of concentrations with constant activity in solions and hydroanions can be obtained for very long periods of time (life span of several days);
- has a high reliability in operation, providing a self-regulating environment of optimal levels of solions and hydroanions, for various procedures for prevention, therapy and improving the human performance of children, the elderly and people with activities that require intense effort or sports performance.
- allows to reduce by half the time of application of the therapy procedures compared to the case of using only the halocamera.

CONTACT
Phone: +40-745-438604 euroinvent@yahoo.com
Web: www.afir.org.ro www.euroinvent.org
Manager: Eng.PhD. Andrei Victor SANDU

PREPARATION METHOD OF GEOPOLYMERS BASED ON RED MUD, FLY ASH AND FLUE GAS FLY ASH PRODUCT SUITABLE FOR CIVIL ENGINEERING APPLICATIONS

Authors:
Dumitru Doru BURDUHOS NERGIȘ [1], Andrei Victor SANDU [1], Madalina-Simona BALTATU [1], Dragos-Cristian ACHITEI [1], Manuela-Cristina PERJU [1], Diana-Petronela BURDUHOS-NERGIȘ [1], Andriana SURLEVA [2], Petrica VIZUREANU [1]

Affiliation:
[1]Faculty of Materials Science and Engineering, "Gheorghe Asachi" Technical University of Iasi, 67 Prof. D. Mangeron Blvd., 700050 Iasi, Romania
[2]Faculty of Chemical Technologies, University of Chemical Technology and Metallurgy, 8 "St. Kl. Ohridski" Blvd., 1756 Sofia, Bulgaria

Patent application: A00156/04.04.2024 in ROMANIA

The invention relates to a preparation method of geopolymers based on red mud, fly ash and flue gas fly ash (fly ash from the desulphurization process of thermoelectric power plants) by alkaline activation with the capacity to cure fast at room temperature.

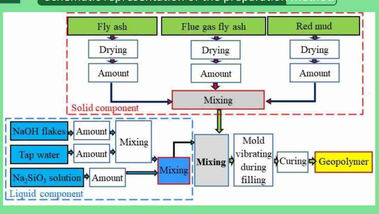
The process according to the invention for making the environmentally friendly geopolymer consists of mixing two components, one solid and one liquid, whose composition is as follows: the solid component consists of 30-35% class F fly ash, 10-15% thermal power plant desulphurization product, 45-50% red mud, and the liquid component consists of Na_2SiO_3 solution and NaOH solution in a mass ratio of between 1.25 and 1.5; the mass ratio between the liquid and solid components is between 0.65 and 0.75, and the concentration of the NaOH solution is 10M or 3M. In the case of 10M concentration, the final set time is about 30 minutes, and in the case of 3M concentration it is about 100 minutes, making it also suitable for 3D printing.

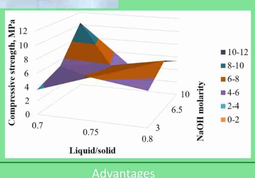
GEOPOLYMERS

Bricks

Samples

Schematic representation of the preparation method





Industrial validation

Advantages

- Raw materials: •Red mud; •Fly ash from the desulphurization process; •Fly ash;
- The raw materials used are industrial wastes;
- Easy to prepare, by mixing components with minimal energy consumption;
- Low carbon footprint.
- Can be used for multiple applications: building facades, floors, decorative panels, bricks, insulating bricks, garden furniture etc.

The novelty of this invention is related to the exploitation of local materials through the development of new compositions of alkaline activated materials using a mixture of three mineral wastes and the specific design (optimization) of suitable compositions for the realization of prefabricated paving elements with physico-mechanical characteristics suitable for the intended field of use.

EUROPEAN EXHIBITION OF CREATIVITY AND INNOVATION (EUROINVENT 2024)